



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,523	08/18/2003	Chien-Wei Li	H0003938	5963
<div>7590 07/11/2007</div> <div>Honeywell International, Inc. Law Dept. AB2 P.O. Box 2245 Morristown, NJ 07962-9806</div> <div>EXAMINER MILLER, DANIEL H.</div> <div>ART UNIT 1775</div> <div>PAPER NUMBER</div> <div>MAIL DATE 07/11/2007</div> <div>DELIVERY MODE PAPER</div>				

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/644,523

Applicant(s)

LI ET AL.

Examiner

Daniel Miller

Art Unit

1775

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 21 June 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: _____.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____.
13. ☐ Other: _____.

Response to Arguments

The rejection stands as follows:

1. Claims 16, and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 6,733,908) in view of Stowell (US 6,207,295).
2. Lee teaches a Si-based substrate with a multi-layered thermal barrier coating (abstract), but is silent as to applicants claimed coating.
3. Stowell teaches a turbine blade with a thermal barrier coating comprising alternating layers of SiO₂ and Ta₂O₅ (claims 1-3 ref. and figures). The multilayer coating comprises the same material claimed by applicant in defining applicant's claimed isolation and oxygen barrier layers. The layered system of Stowell can comprise many successive layers of Silica and tantalum oxide (see figure 1), meeting claim requirements for second and third layers of isolation or oxygen barrier layers.
4. The multilayered coating diffuses oxygen and prevents the formation of oxides (column 3 line 15-25).
5. It would be obvious to one of ordinary skill in the art at the time of the invention to apply the same coating to the Si-based substrate of Lee in order to diffuse oxygen and prevents the formation of oxides which corrode the substrate. The tantalum oxide layer is deposited using CVD (column 4 line 49-60).

Art Unit: 1775

6. The barrier layer, including (SiO₂) layers, would be expected to inherently prevent diffusion of oxygen as claimed since it is substantially the same material taught by applicant.

7. The tantalum oxide layer is deposited using CVD (column 4 line 49-60; column 5 line 47-55).

The examiner acknowledges that the quoted section in the response to arguments was not properly cited. The examiner can't find the teaching of 1 to 500 microns in Lee. These comments are withdrawn. However, this does not prevent a finding of obviousness or the combination of Stowell and Lee.

8. Applicant argued that the layers of Stowell and Lee would not be combinable because the layers of Stowell are thinner than those of Lee and are not contemplated on a more macro scale, as claimed. The examiner disagrees with applicant's arguments. Applicant points to the claimed thicknesses of the Stowell layers being 0.1-0.23 and 0.1 to 0.4 microns for the tantalum oxide and SiO₂ respectively (claim 6 Stowell). However, the reference clearly teaches that the alternating layers can be 0.05 to 1.2 microns (column 4 line 5-10). The upper range of 1.2 microns overlaps applicant's claimed range. Lee teaches a range of 5 to 125 micrometers (as acknowledged by applicant remarks page 3 6/21/07); which also is in the macroscale and overlap applicant's claimed range of 1 to 100 microns.

9. Finally, applicant's arguments with respect to thickness of the Stowell and Lee layers being different is unconvincing. The layers of differing compositions are within the

Art Unit: 1775

same scale. The examiner does not see any reason why the combination and substitution of the layers in thicknesses taught by the respective references would be improper. The combination of the references providing a thickness that would overlap applicants claimed ranges.

10. Stowell teaches that the alternating layers can be 0.05 to 1.2 microns (column 4 line 5-10). So, the layers would be substituted as the upper layers in that thickness. Which would, if the upper range of 1.2 microns is chosen, overlap applicant's claimed range of thickness and composition.

11. Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to apply the same coating to the Si-based substrate of Lee in order to diffuse oxygen and prevents the formation of oxides which corrode the substrate. Rejection maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571)272-1534. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571)272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1775

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel Miller



JENNIFER C. MCNEIL
SUPERVISORY PATENT EXAMINER

7/6/7